

**AMENDMENTS TO THE SPECIFICATION**

**Please replace the paragraph bridging pages 1 and 2 ( page 1, line 30 through page 2, line 1) with the following amended paragraph:**

In parallel with wavelength division multiplexing, time division multiplexing enables the simultaneous transmission of a plurality of calls on the same carrier because each carrier transmits packets relating to different messages whose information content has been divided between the packets, which are sent over the network with a header indicating their destination. When the packet passes through a switch, the latter locks its ~~signal  $F_t$  (t varying from 1 to L)~~ physical resources for the time needed to route the packet to the requested output. Those resources are then freed to switch another packet. As the packets have a limited time duration, of the order of 1 microsecond, many calls can be transmitted in a short time period. This routing policy is currently used by the largest Internet Protocol networks.

**Please replace the first through ninth full paragraphs on page 2 (page 2, lines 30-26) with the following amended paragraphs:**

The signal  $F_t$  is a WDM signal comprising  $C_e$  channels associated with respective different wavelengths belonging to a predefined WDM comb.

Each of the signals  $F_t$  is amplified by the amplifier  $A_t$ , which is an erbium-doped fiber amplifier, for example, and is then broadcast by one of the  $L$  couplers  $D_1$  to  $D_L$  to a corresponding input of each of the  $C_s \times P_s$  selection modules  $S_1$  to  $S_{C_s \times P_s}$ , each selection module having  $L$  inputs and one output.

~~Figure 2 shows a selection module S used in the switch shown in figure 1.~~

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Application No. 10/779,732

~~The selection module S comprises:~~

- ~~—a spatial selector SE<sub>1</sub>, and~~
- ~~—a spectral selector SE<sub>2</sub>.~~

~~The spatial selector SE<sub>1</sub> comprises:~~

~~—L optical ports G<sub>t</sub> (t varying from 1 to L) having inputs that constitute L respective inputs of the spatial selector SE<sub>1</sub>, and~~

~~—an optical coupler C<sub>L1</sub> for selectively coupling the L inputs via optical gates to a single output that constitutes the output of the spatial selector.~~

~~Each optical gate (optical switch) G<sub>t</sub> is typically a semiconductor optical amplifier that is supplied with power only when it must transmit a signal.~~

~~Each of the L inputs receives a WDM signal F<sub>t</sub> which therefore comprises a plurality of channels each associated with a wavelength.~~

~~Thus the spatial selector S<sub>E1</sub> sends to its output only one of the L signals F<sub>t</sub> it has received.~~

~~The spectral selector S<sub>E2</sub> selects only one of the plurality of channels of the signal F<sub>t</sub> selected by the spatial selector S<sub>E1</sub>.~~

The multitude of signals transmitted by the networks necessitates the introduction of switches for directing the signals received at a plurality of inputs, corresponding to a first set of optical fibers, to a plurality of outputs, corresponding to a second set of optical fibers. By controlling them appropriately, some switches, known as broadcast and select switches,

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Application No. 10/779,732

broadcast a signal coming from an input and select the output of the switch to which the signal is sent.

Figure 1 shows a broadcast and select switch 10.

The switch 10 comprises:

-  $P_e$  input ports each connected to an input fiber  $I_j$  ( $j$  varying from 1 to  $P_e$ ),

-  $P_e$  demultiplexers  $DI_1$  to  $DI_{P_e}$ ,

-  $L \times C_e$  optical regenerators  $RI_i$  ( $i$  varying from 1 to  $L \times C_e$ ),

-  $L$  multiplexers  $MI_1$  to  $MI_L$ ,

-  $L$  amplifiers  $A_1$  to  $A_L$ ,

-  $L$  couplers  $D_1$  to  $D_L$ ,

-  $CsxPs$  selection modules  $S_1$  to  $S_{C_{sx}Ps}$ ,

-  $CsxPs$  optical regenerators  $RO_k$  ( $k$  varying from 1 to  $CsxPs$ ),

-  $P_s$  multiplexers  $MO_1$  to  $MO_{P_s}$ , and

-  $P_s$  output ports each connected to an output fiber  $O_m$  ( $m$  varying from 1 to  $P_s$ ).

Each input port receives on one of its input fibers  $I_j$  a wavelength division multiplex (WDM) signal.

The WDM signals are demultiplexed by the  $P_e$  demultiplexers  $DI_1$  to  $DI_{P_e}$ .

The demultiplexed signals are then regenerated by the optical regenerators  $RI_j$ , which amplify and reshape the optical pulses of the signals. The optical regenerators  $RI_j$  can also modify the wavelength associated with each signal.

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Application No. 10/779,732

Please replace the paragraph bridging pages 2 and 3 (page 2, line 27 through page 3, line 1) with the following amended paragraph:

The spectral selector  $S_{E2}$  has a tunable filter function. It may comprise, for example:

- ~~—a demultiplexer comprising an input receiving the signal selected by the spatial selector and a plurality of outputs,~~
- ~~—a multiplexer comprising a plurality of inputs and an output supplying the signal associated with the channel selected from the plurality of channels of the signal selected by the spatial selector, and~~

~~signal  $F_t$  (t varying from 1 to L).~~

The regenerated signals are then multiplexed by the L multiplexers  $MI_1$  to  $MI_L$ , each multiplexer having  $C_e$  inputs and supplying at its output a signal  $F_t$  (t varying from 1 to L).